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# Understanding Culinary Tourists: Segmentations based on Past Culinary Experiences and Attitudes toward Food-related Behaviour

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## UNDERSTANDING CULINARY TOURISTS: SEGMENTATIONS BASED ON PAST CULINARY EXPERIENCES AND ATTITUDES TOWARD FOOD-RELATED BEHAVIOR

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### Abstract

This study segments the market for culinary tourists using two approaches. The first uses a combination of the level of participation in culinary experiences and food-related activities as prime motivators and results in four distinct segments (*deliberate, opportunistic, accidental, and uninterested culinary tourists*). The second is based on attitudes toward food-related behaviors at home and when traveling and three culinary tourist groups are highlighted (*culinary-balanced, culinary-oriented, and familiarity-oriented tourists*). In addition, this study compares differences and identifies the relationships between the two methods of segmenting culinary tourists. Findings indicate that a strong relationship exists between attitudes and behaviors, and suggest that culinary experiences at destinations (level of participation in food-related activities and activities as the prime motivator) are highly related to attitudinal, psychological, perceptual, and other behavioral factors. Further, the deliberate and opportunistic culinary tourists are equally significant in terms of market size, the economic contribution the segment has for the destination, and cultural/social interaction with communities.

**Key Words:** culinary tourism, segmentation, culinary experiences, culinary activities, attitudes toward food-related behavior

### Introduction

Many studies have suggested that a substantial percentage of tourists seek cultural experiences such as visiting cultural attractions and participating in diverse cultural activities that are *not* “sun, sand and sea.” Cultural tourism is not limited to visiting museums, historic sites, or art galleries; it also includes, amongst other things, cuisine, gastronomy, and culinary (cooking) experiences. A new form of cultural experience, culinary tourism has been emerging throughout the world. According to Richards (2002), gastronomy plays a key role in cultural tourism because it “has become a significant source of identity formation in postmodern society” (p.3).

Scarpato (2002) sees gastronomy as a “medium of cultural tourism” and as an important resource for destinations seeking to develop new quality tourism products and experiences. Culinary tourism has been identified as an important component of the rapidly growing cultural tourism market (Canadian Tourism Commission, 2002). It is a new niche that can contribute to economic and community development, as well as intercultural insights. While this latest iteration of culinary tourism offers new opportunities, the core concept of culinary tourism is actually very old. Thousands of years ago, merchants traveled abroad, looking for exotic and different foods and drinks to trade or to bring home. Spices, wine, fruits and other food products were often used as currencies in the

past (Wolf, 2004). Several recent studies have asserted that an increasingly significant number of tourists are identifying food as a key aspect of the travel experience and that they believe that experiencing a country's food is essential to understanding its culture (Bessiere, 1998; Cohen and Avieli, 2004; Long, 2003; Quan and Wang, 2003).

An examination of the forces shaping the culinary "product" and a deeper understanding of culinary "tourists" will aid in identifying the reasons culinary tourism is critical at travel destinations. An analysis of tourists' behavior and segmentation of culinary tourists based on past culinary experiences at travel destinations (participation in food and food-related activities and activities as prime motivators) and attitudes toward food-related behavior will provide insight into their behavior in travel destinations. Ultimately, this analysis would contribute to a better understanding of culinary tourists, thus providing tourism planners with guidance as they develop culinary products and marketing strategies targeted at culinary tourists.

Who are the tourists that visit food or food-related attractions and/or engage in culinary activities and what are their motivations? What specific travel behaviors make them distinct from other tourists? How large is the demand for culinary tourism and what types of food and food-related activities are most likely to attract tourists? How can culinary tourism be successfully developed and promoted? The answers to these and related questions may depend upon the destination, given the different, place-based elements that create a destination's unique culinary attractions/activities.

In an attempt to identify a possible basis upon which the culinary tourism market may be effectively segmented, this study examines travelers' past culinary experiences including level of participation in specific food-related activities, food-related activities as prime motivators, and attitudes toward food-related behavior at home and when traveling. The purposes of this study are to examine the meaning and significance of culinary tourism in general, to develop a useful segmentation of culinary tourists, and to identify the relationships between the different types of culinary tourists.

## Literature Review

*Culinary Tourism.* There are several definitions of culinary tourism, but most refer to the activities designed to appeal to the traveler who appreciates the more unique aspects of the food and drink of a particular destination. Long first used the term 'culinary tourism' in 1998 to express the idea of how we experience cultures through food (Wolf, 2004). She stated that "culinary tourism is about food; exploring and discovering culture and history through food and food related activities in the creation of memorable experiences" (Long, 2004). The Canadian Tourism Commission (2002) defines culinary tourism in terms of a myriad of food and beverage - related activities developed for visitors and involving cultural discovery of a region's dishes. Wolf (2004) suggests that culinary tourism exists within the context of agricultural tourism (which includes farm holidays, visiting farmers' markets and fruit orchards, amongst others) and focuses specifically on the search for, and enjoyment of, prepared food and drink.

According to Ignatov and Smith (2006), the term "culinary" can refer to ingredients, prepared foods, beverages, food production, motivations, activities, institutional structures, and food tourism itself. The scholars suggest that culinary tourism may be defined as "trips during which the purchase or consumption of regional foods (including beverages), or the observation and study of food production (from agriculture to cooking schools), represent a significant motivation or activity." Culinary-related experiences include but may not be limited to: traditional or high quality dining experiences, food and Wine festivals and events, culinary learning experiences - cooking schools, wine education, tasting/buying local products/farmer's markets, visitation to and/or tours of wineries and/or vineyards, wine tasting, observing chefs compete, eating/drinking at a hard-to-find "locals-only" restaurant or bar, fruit picking, food trails (e.g. apple routes; beer routes), walking in food streets and precincts in cities (Canadian Tourism Commission, 2002; Getz, 2000; The Economic Planning Group of Canada, 2001; Wolf, 2004).

There is some variation in these definitions but a common aspect is that culinary tourism refers not just to dining out while traveling, but to a wide range of culinary travel experiences that highlight food, drink or dishes unique to the destination, or that highlight some other aspect of local culture.

*Who is the Culinary Tourist?* There are many definitions of the culinary tourist. Previous studies have attempted to segment culinary tourists based on various attributes and characteristics. Hjalager (2004) used the “culinary tourism experience” model, which predicted tourists’ attitudes and preferences with respect to diet. In this model, tourists were divided into four categories: recreational, existential, diversionary and experimental. Ignatov and Smith (2006), on the other hand, divided the Canadian culinary tourism market into three major sub-markets based on the Canadian Travel Activities and Motivations Study: food tourists, wine tourists, and food and wine tourists. Mack, Blose and MacLaurin (2009) classified tourists into two major groups: culinary tourists and non-culinary tourists. Culinary tourists were then divided into two sub-clusters, culinary tourist innovators and culinary tourist non-innovators, using social value scales.

Equally important to the task of defining culinary tourism is the task of distinguishing between the culinary tourist and the tourist who engages in culinary tourism activities. The former is one who is motivated to travel specifically to engage in culinary tourism activities. The latter is one who engages in culinary tourism activities while traveling, but for whom culinary experiences are not necessarily the motivating factor for the trip. Some scholars define the culinary tourist as someone who is *motivated* to travel specifically to engage in culinary tourism activities. Others include in the definition those who *engage* in culinary tourism activities while traveling, but for whom culinary experiences are *not necessarily* the motivating factor for the trip. It is also important to note that some definitions exclude those interested in the two main sub-sectors of culinary tourism: wine tourism and agri-tourism. Research suggests, for example, that travelers whose *prime* motivator for traveling is tasting or consuming wines are distinct from those interested in local or regional food production or consumption (Ignatov, 2004; Smith, 2001).

## Methodology

*Sampling.* This study used primary data collected on a proprietary on-line panel that was established by the Tourism Research Centre (TRC) at the University of Prince Edward Island (PEI) on behalf of Tourism Prince Edward Island. The panel includes both individuals who have visited and have not visited PEI, although all panel members had expressed interest in visiting PEI by requesting the visitor information package from Tourism PEI. The panel mix is 89% visitors to PEI, 11% non-visitors. These panel members were utilized as the sampling frame. The survey was conducted from December 29, 2009 to January 18, 2010. In total, 12,264 panel members were invited to complete the survey through e-mail requests. During the survey period, three reminders were sent to those who had not completed the survey, thus a total of four contacts were made with the sampling frame. 3,718 people (30.3%) started the survey, and a total of 3,173 (25.9%) surveys were completed. Of these, this study used only 781 surveys that were randomly selected using a stratified random sampling method based on the respondents’ origin (place of residence: Canada provinces and US regions) and those who visited Prince Edward Island in 2009.

*Sample Characteristics.* Of the 781 respondents, 580 (74.3%) were residents of Canada and 201 (25.7%) were US residents. More respondents were female (58.6%) than male (41.4%). The vast majority of respondents were married or living in common-law (82.3%). Over half of respondents (55.2%) were working full time and 27.1% were retired. Respondents varied widely in age, education level, and annual household income. However, over half (63.1%) of respondents were between the ages of 45 and 64. Respondents were most likely to have undergraduate degree (25.2%) or graduated community/ technical college (21.9). While 29.8% of respondents had an annual household income of less than \$60,000, 33.2% had more than \$100,000.

*Measurement.* To identify typologies of culinary tourists, two main constructs were used to analyze the data: (1) specific food-related activities at destinations and (2) attitudes toward food-related behaviors. For questions regarding food-related activities, respondents were asked to indicate whether they participated in any of the specific activities related to culinary experiences while on an overnight, out-of-town pleasure trip in the past two years.

Furthermore, they were asked if any of these activities was the main reason or prime motivator for taking any of pleasure trips in the past two years. Thirteen items pertinent to culinary experiences at travel destinations were used to identify the tourists who engaged in culinary and food-related activities; these 13 items were also used to identify the tourists who were motivated to travel specifically to engage in culinary tourism activities. These culinary activities were selected from previously identified items in the travel and tourism literature and research reports from tourist destinations (Canadian Tourism Commission, 2003; Hashimoto and Telfer, 2006; Ontario Ministry of Tourism, 2005, 2007; Smith and Xiao, 2008; TAMS, 2006; Travel Industry Association of America, 2007).

A 25-item attitudinal scale was used to identify attitudes toward food-related behavior at home and when traveling. The 25 items were selected from the literature (Blose and Litvin, 2005; Boyne and Hall, 2004; Hjalager and Richards, 2002; Ignatov, 2003; Kahle and Kennedy, 1989; Kivela and Crotts, 2006; Mack, Blose, and MacLaurin, 2009; MacLaurin, Blose, and Mack, 2007) and responses were measured on a 5-point Likert-type scale, where 1=strongly disagree and 5=strongly agree.

*Data Analysis.* In this study, two different segmentation methods were utilized to identify typologies of culinary tourists. For the first segmentation of culinary tourists, a two-step hierarchical cluster analysis was performed based on past culinary experiences; the analysis considered participation in 13 food-related activities, and whether these activities served as trip motivators over the past two years. First, respondents were classified into the two groups based on whether the specific food-related activities were the prime motivator for travel. Second, the group where food related activity was not a motivator was divided into the three clusters based on the level of participation in the food-related activities.

For the second segmentation of culinary tourists, factor-cluster analysis was performed using the 25 items regarding attitudes toward food-related activities. The factor-mean scores from the principal component analysis allowed grouping of the respondents using the *K*-means clustering algorithm, whereby a set of points is partitioned into *k* groups (Pollard, 1981). This clustering method is employed to find disjoint clusters (SAS Institute, Inc., 1990) with the means of each attitudinal factor serving as an input. The algorithm is used to group respondents into mutually exclusive cluster groups using nearest centroid sorting (Aldenderfer and Blashfield, 1984). Several repeating cluster solutions are undertaken since the number of cluster groups is subjectively decided on the basis of interpretation and the number of cases within each cluster.

Multivariate data analyses such as analysis of variance (ANOVA), multivariate analysis of variance (MANOVA), and discriminant analysis were run to test validation of the cluster analysis results. Separate ANOVAs were conducted on each of the items to determine whether the variables or factors in each cluster group differed. MANOVA and discriminant analysis were run to check the overall significance of cluster group differences that statistically confirm the results of cluster analysis. Discriminant analysis was also used to identify the selected variable's influence on the cluster. A cross-tabulation with Chi-square analysis was computed to compare the differences and identify relationships between the two segmentation results.

## Results

*Segmentation based on Past Culinary Experiences.* Table 1 details the results for the 26 survey questions related to participation in culinary activities when traveling and whether culinary activities were a motivation for taking the trip. The values in the table indicate the percentage of the respondents in each cluster that report participating in a specific food-related activity. A two-step hierarchical cluster analysis was performed.

First, respondents were classified into the two groups based on whether the specific food-related activities were the prime motivator to travel or not. Overall, 15.4% of respondents reported both high involvement in food-related activities and a motivation to travel for food-related activities. This segment is termed "Deliberate Culinary Tourists". These culinary tourists are often identified as "foodies" and compared to other respondents they participate in more food-related activities and at higher than average rates. Furthermore, culinary pursuits motivate

this segment to travel. Notably, this group was the only one of the four identified in this study that reported any level of motivation to travel based on food or food-related activities.

Second, the remaining 84.6% (661) of the respondents were divided into three clusters based on the level of participation in the stated food-related activities. The first cluster is termed “Opportunistic Culinary Tourists” and consists of 302 respondents (38.7%) who reported high involvement in food-related activities when traveling. Even though they are not motivated to travel for culinary experiences, they have similar rates of participation in food-related activities as the deliberate segment. Both groups choose food and food-related activities at much higher levels than the other segments. Participation in activities such as “attending farmers’ markets,” “dinning at restaurants known for offering local ingredients,” “visiting farms/orchards,” “dining at highly rated restaurants,” and “attending country fairs” was high for both groups. The opportunistic culinary tourist differs from the deliberate segment in that the former is not motivated to travel by food-related activities, even though they participate at comparably high levels in these activities once at the destination.

The third cluster in Table 1 reports relatively low involvement in food-related activities when traveling. At 39.1% of respondents, this is the largest segment (by a very small margin), and is termed “Accidental Culinary Tourists.” This segment is defined as tourists who participate in food-related activities, but do so more by chance (i.e. they do not seek out these culinary opportunities). Accidental culinary tourists show low levels of participation in most food-related activities, especially when compared to the deliberate and opportunistic segments. Two activities that accidental tourists have high rates of participation are “attending farmers’ markets” and “dining at restaurants known for offering local ingredients,” both of which are also the most popular activities amongst opportunistic and deliberate culinary tourists. The final and smallest cluster consists of only 54 respondents (6.9%) and is termed “Uninterested Culinary Tourists.” These were people who were not engaged in any of the food-related activities when traveling in the past two years.

Multiple discriminant analysis (MDA) was performed on the four clusters that resulted from the two-step hierarchical cluster analysis. The goal of the discriminant analysis was to identify the specific culinary activity and motivational items that best discriminated among the identified clusters. Since this was a four-cluster discriminant analysis model, it was necessary to calculate three canonical discriminant functions (Hair, Anderson, Tatham, and Black, 1998). Table 2 contains the results for the canonical discriminant functions; the three functions are statistically significant, as measured by the chi-square statistics. With an eigenvalue of 1.258, Function 1 explained 65% of the variation. Function 2, with an eigenvalue of 0.731, explained 32.7 % of the remaining variation, and Function 3 explained only 2.3% of the remaining variation with an eigenvalue of 0.118. A Wilks’ lambda test and univariate *F*-test determined the significance of each of the specific culinary experience items. The canonical correlations were high (0.877, 0.791, and 0.325) and significant ( $p < 0.0001$  for all functions), indicating that the model accurately explains the significant relationship between the function and the dependent variable. To determine whether the functions are valid predictors, the classification matrices were examined. Referring to Table 3, the discriminant functions achieve a high degree of classification accuracy, with the overall hit ratio of the analysis sample being 89.5 %. Specifically, 76.6% of Deliberate Culinary Tourists, 94.7% of Opportunistic Culinary Tourists, 87.5% of Accidental Culinary Tourists, and 100% of Uninterested Culinary Tourists were correctly classified into their respective groups.

Table 1  
Results of Cluster Analysis based on a Combination of Participation in Food-related Activities and Activities as Trip Motivators in the Past Two Years (Segmentation I)

	Deliberate Culinary Tourists	Opportunistic Culinary Tourists	Accidental Culinary Tourist	Uninterested Culinary Tourists	Total	F-Value
<i>N</i> (%)	120 (15.4%)	302 (38.7%)	305 (39.1%)	54 (6.9%)	781 (100.0%)	
ANOVA Statistics						
Index of Food-related Activity Participation (%)	66.8 <sup>a</sup>	63.7 <sup>a</sup>	26.5 <sup>b</sup>	0.0 <sup>c</sup>	45.2	683.60***
Attending dinner theatre	43.3 <sup>b</sup>	56.3 <sup>a</sup>	19.3 <sup>c</sup>	0.0 <sup>d</sup>	36.0	48.84***
Attending farmers' markets	90.8 <sup>a</sup>	92.4 <sup>a</sup>	55.1 <sup>b</sup>	0.0 <sup>c</sup>	71.2	129.81***
Attending country fairs	75.8 <sup>a</sup>	76.5 <sup>a</sup>	31.1 <sup>b</sup>	0.0 <sup>c</sup>	53.4	96.21***
Attending food/drink/wine festivals	75.8 <sup>a</sup>	59.6 <sup>b</sup>	12.8 <sup>c</sup>	0.0 <sup>d</sup>	39.7	117.17***
Participating in cooking/wine courses	17.5 <sup>a</sup>	24.5 <sup>a</sup>	3.0 <sup>b</sup>	0.0 <sup>c</sup>	13.3	26.00***
Dining at restaurants known for offering local ingredients	92.5 <sup>a</sup>	85.8 <sup>a</sup>	62.3 <sup>b</sup>	0.0 <sup>c</sup>	71.7	92.26***
Dining at highly rated restaurants	76.7 <sup>a</sup>	73.5 <sup>a</sup>	40.0 <sup>b</sup>	0.0 <sup>c</sup>	55.8	66.03***
Shopping for gourmet foods	64.2 <sup>a</sup>	56.3 <sup>a</sup>	15.4 <sup>b</sup>	0.0 <sup>c</sup>	37.6	76.19***
Visiting wineries/breweries for tours	72.5 <sup>a</sup>	65.2 <sup>a</sup>	22.6 <sup>b</sup>	0.0 <sup>c</sup>	45.2	84.62***
Touring a food/wine/beer route	56.7 <sup>a</sup>	45.4 <sup>b</sup>	5.9 <sup>c</sup>	0.0 <sup>c</sup>	28.6	81.32***
Visiting farms/orchards	80.8 <sup>a</sup>	74.2 <sup>a</sup>	26.9 <sup>b</sup>	0.0 <sup>c</sup>	51.6	111.37***
Visiting u-pick (pick your own) locations	52.5 <sup>a</sup>	50.0 <sup>a</sup>	15.1 <sup>b</sup>	0.0 <sup>c</sup>	33.3	51.91***
Visiting food processing facilities	69.2 <sup>a</sup>	67.9 <sup>a</sup>	34.8 <sup>b</sup>	0.0 <sup>c</sup>	50.4	55.86***
Index of Food-related Activity as a Motivation (%)	23.1 <sup>a</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	3.6	435.21***
Attending dinner theatre	16.7 <sup>a</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	2.6	43.84***
Attending farmers' markets	15.0 <sup>a</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	2.3	38.68***
Attending country fairs	28.3 <sup>a</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	4.4	86.66***
Attending food/drink/wine festivals	27.5 <sup>a</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	4.2	83.15***
Participating in cooking/wine courses	3.3 <sup>a</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	0.5	7.56***
Dining at restaurants known for offering local ingredients	34.2 <sup>a</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	5.2	113.76***
Dining at highly rated restaurants	24.2 <sup>a</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	3.7	69.86***
Shopping for gourmet foods	9.2 <sup>a</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	1.4	22.12***
Visiting wineries/breweries for tours	40.8 <sup>a</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	6.3	151.28***
Touring a food/wine/beer route	28.3 <sup>a</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	4.4	86.66***
Visiting farms/orchards	30.0 <sup>a</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	4.6	93.94***
Visiting u-pick (pick your own) locations	20.8 <sup>a</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	3.2	57.69***
Visiting food processing facilities	22.5 <sup>a</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	0.0 <sup>b</sup>	3.5	63.64***
MANOVA Statistics						
Wilks' Lambda	Value	d.f.	F-Value	p-Value		
Pillai's Trace	0.077	10	39.00	<.0001		
Hotelling-Lawley Trace	1.500	10	28.99	<.0001		
Roy's Greatest Root	5.111	10	49.19	<.0001		
	3.320	5	96.29	<.0001		

Note: These items were measured on a binary scale (0 = have not engaged in activity or was not a prime motivator and 100 = have engaged in activity or was a prime motivator); \*\*\* All items were significantly different at  $p < .0001$ ; <sup>a</sup>, <sup>b</sup>, <sup>c</sup> and <sup>d</sup> indicate the results from the Duncan's post-hoc multiple comparison tests ( $a > b > c > d$ ).

Table 2  
Summary of Discriminant Analysis for the Segmentation I

Discriminant Function	Eigenvalue <sup>a</sup>	% of Variance	Canonical Correlation	Wilks' $\lambda$	$\chi^2$	d.f.	p-Value
1	3.320	65.0	0.877	0.077	1956.83	78	.0001
2	1.673	32.7	0.791	0.335	837.40	50	.0001
3	0.118	2.3	0.325	0.895	85.20	24	.0001

Note: <sup>a</sup> First three canonical discriminant functions were used in the analysis.

Table 3  
Classification Results for the Segmentation I

	Predicted Group Membership				Total
	Deliberate	Opportunistic	Accidental	Uninterested	
Cluster 1: Deliberate Culinary Tourists	92 (76.6%)	20 (16.7%)	8 (6.7%)	0 (0.0%)	120
Cluster 2: Opportunistic Culinary Tourists	0 (0.0%)	286 (94.7%)	16 (5.3%)	0 (0.0%)	302
Cluster 3: Accidental Culinary Tourists	0 (0.0%)	0 (0.0%)	267 (87.5%)	38 (12.5%)	305
Cluster 4: Uninterested Culinary Tourists	0 (0.0%)	0 (0.0%)	0 (0.0%)	54 (12.5%)	54

Note: 89.5% of original grouped cases correctly classified.

*Segmentation based on Attitudes toward Food-related Behavior.* The first step in segmenting respondents involved performing a factor-cluster analysis of the 25 items regarding attitudes toward food-related behavior (measured on a five-point Likert-type scale) using varimax rotation. The factor-mean scores from the principal component analysis allowed grouping of the respondents using the *K*-means cluster analysis algorithm. Factor analysis identified five underlying dimensions that explained 64.23% of the total variance. Appropriateness of factor analysis determined by examining Kaiser's measure of sampling adequacy was 0.94 (critical value of .60 according to Tabachnick and Fidel, 1989). All attributes had factor loadings higher than .44, which indicates a reasonably high correlation between the delineated factors and their individual items (Hattie, 1985). Reliability coefficients for all five factors were greater than 0.63; these factors/dimensions were labeled: "food-related experiences at destinations," "local and organic foods," "wine/beer related experiences," "interest in cooking," and "familiar foods and restaurants at destinations."

Table 4 clearly illustrates that the 781 respondents could be neatly partitioned into three cluster groups, based on the five factors of attitudes toward food-related behavior. Determining the number of clusters involved an examination of the *F*-statistics from a two-, three-, four-, and five-cluster solution derived from a *K*-means cluster analysis (Milligan and Cooper, 1985; Reynolds and Beatty, 1999). The three-cluster solution was the most meaningful and interpretable. The clustering statistics indicate that the clustering model was an excellent fit for the data presented in Table 4. The first cluster is the largest, with 317 respondents (40.6%), and shows mean scores of the five factors of attitudes toward food-related behavior. Based on the value attached to these attitudinal factors, this group was termed "Culinary-balanced Tourists". Appropriately, this cluster is located in between the second and third cluster, representing a middle ground with respect to attitude score. The second cluster shows the highest scores in all five dimensions of attitudes toward food-related behavior and includes 247 respondents (31.6%). This cluster was labeled as "Culinary-oriented Tourists." The third cluster was more likely to be highly involved in familiar foods and restaurants at destinations. This group includes 217 respondents (27.8%) and was termed "Familiarity-oriented Tourists"



The  $F$ -values in ANOVA tests and a Wilks' lambda test and univariate  $F$ -test in MANOVA revealed that the mean scores for the five factors of attitudes toward food-related behavior are significantly different at  $p < 0.0001$  level for the three clusters. This result clearly supports the method used to analyze the data. Of the five attitudinal factors regarding food-related behavior ( $R$ -Squares in Table 4), "wine/beer related experiences" was the most significant contributor to the clustering model, with an  $R^2 = 0.66$ , followed by "food-related experiences at destinations." "Interests in cooking" and "local and organic foods" follow in that order. Notably, the remaining factor of "familiar foods and restaurants at destinations" was significant, but had a very minor contribution.

The results of the MDA identified which attitudinal items toward food-related behavior were driving the differences between clusters; it also allowed assessment of the accuracy level of classification of a segment's membership. Two canonical discriminant functions were calculated and identified as statistically significant based on canonical correlations and the Chi-square statistics, indicating that the clustering model accurately explains the significant relationship between the function and the dependent variable. The classification matrix of respondents suggests that the attitudinal discriminant function accurately classified the three clusters. As presented in Table 6, 97.6% were correctly classified, representing a very high accuracy rate. Specifically, 96.8% of Culinary-balanced Tourists, 98.0% of Culinary-oriented Tourists, and 89.2% of Familiarity-oriented Tourists were correctly classified into their respective groups.

Table 4  
Results of Cluster Analysis based on Attitudes toward Food-related Behavior (Segmentation II)

	Culinary-balanced Tourists	Culinary-oriented Tourists	Familiarity-oriented Tourists	Total	$F$ -Value	$R$ -Square
$N$ (%)	317 (40.6%)	247 (31.6%)	217 (27.8%)	781 (100.0%)		
Clustering Statistics						
RMS Std. Deviation	0.69	0.72	0.68			
Maximum distance from the seed to observation	3.24	3.15	3.29			
Nearest cluster	3	1	1			
Distance between cluster centroids	1.86	2.03	1.85			
ANOVA Statistics						
F1: Food-related Experiences at Destinations	3.34 <sup>b</sup>	4.14 <sup>a</sup>	2.33 <sup>c</sup>	3.31	586.87***	0.59
F2: Local & Organic Foods	2.98 <sup>b</sup>	3.76 <sup>a</sup>	2.31 <sup>c</sup>	3.04	259.31***	0.40
F3: Wine/Beer related Experiences	2.57 <sup>b</sup>	3.89 <sup>a</sup>	1.45 <sup>c</sup>	2.67	855.72***	0.66
F4: Interests in Cooking	2.59 <sup>b</sup>	3.56 <sup>a</sup>	1.92 <sup>c</sup>	2.71	376.26***	0.50
F5: Familiar Foods and Restaurants at Destinations	2.65 <sup>b</sup>	2.59 <sup>b</sup>	3.21 <sup>a</sup>	2.79	32.79***	0.13
MANOVA Statistics	Value	d.f.	$F$ -Value	$p$ -Value		
Wilks' Lambda	0.147	10	249.52	<.0001		
Pillai's Trace	0.893	10	125.12	<.0001		
Hotelling-Lawley Trace	5.550	10	428.99	<.0001		
Roy's Greatest Root	5.500	5	852.52	<.0001		

Note: \*\*\* All items were significantly different at  $p < .0001$ ; <sup>a</sup>, <sup>b</sup> and <sup>c</sup> indicate the results from the Duncan's post-hoc multiple comparison tests ( $a > b > c$ ).

Table 5  
Summary of Discriminant Analysis for the Segmentation II

Discriminant Function	Eigenvalue <sup>a</sup>	% of Variance	Canonical Correlation	Wilks' $\lambda$	$\chi^2$	d.f.	p-Value
1	5.500	99.1	0.920	0.147	1490.02	10	.0001
2	0.105	0.9	0.217	0.956	37.49	4	.0001

Note: <sup>a</sup> First two canonical discriminant functions were used in the analysis.

Table 6  
Classification Results for the Segmentation II

	Predicted Group Membership			Total
	Culinary-balanced	Culinary-oriented	Familiarity-oriented	
Cluster 1: Culinary-balanced Tourists	307 (96.8%)	5 (1.6%)	5 (1.6%)	317
Cluster 2: Culinary-oriented Tourists	5 (2.0%)	242 (98.0%)	0 (0.0%)	247
Cluster 3: Familiarity-oriented Tourists	4 (1.8%)	0 (0.0%)	213 (98.2%)	217

Note: 97.6% of original grouped cases correctly classified.

*Relationships between the Two Types of Culinary Tourists.* In order to identify the differences and the relationships between the two segmentations of culinary tourists identified in this study and develop a better understanding of culinary tourists, a cross-tabulation with Chi-square analysis was performed. As illustrated in Table 7, Segmentation I, with the four clusters (Deliberate, Opportunistic, Accidental, and Uninterested Culinary Tourists) based on past culinary experiences and motivations, is significantly different from Segmentation II, with the three segments (Culinary-balanced, Culinary-oriented, and Familiarity-oriented Tourists) based on attitude measures toward food-related behavior ( $\chi^2 = 215.90$ ; d.f. = 6;  $p < 0.0001$ ).

A cross-tabulation includes observed frequencies, row and column percent, the differences between observed and expected frequencies (observed - expected  $N$ ), and standardized residuals. Note that clusters with a standardized residual greater than one and expected frequencies greater than twenty are more meaningful for further analysis. Despite the differences identified between the two segmentations of culinary tourists, some similarities and/or relationships between the two segmentation groups were also found. According to the differences between observed and expected frequencies, and standardized residuals, Culinary-balanced Tourists were more likely to be Opportunistic and Accidental Culinary Tourists. While Culinary-oriented Tourists tended to be Deliberate and Opportunistic Culinary Tourists, and Familiarity-oriented Tourists were more likely to be Accidental and Uninterested Culinary Tourists.

## Discussion and Conclusion

This study identified two segmentations of culinary tourists, the first based on the level of participation in culinary experiences and food-related activities as prime motivators and the second on attitudes toward food-related behavior at home and when traveling. In addition, this study compared differences and identified the relationships between the two segmentations of culinary tourists.

A culinary tourist in this study was defined by two different concepts: one based on tourists' past culinary experiences and motivations and the other on the basis of attitudes toward food-related behavior at home and when traveling. The former was defined in terms of food-related activities at destinations and culinary experiences as the

prime motivator or the main reason for trip. A culinary tourist was defined as someone who participated in and/or was motivated by food and food-related activities such as attending dinner theatre, attending farmers' markets, attending country fairs, attending food/drink/wine festivals, participating in cooking/wine courses, dining at restaurants known for offering local ingredients, dining at highly rated restaurants, shopping for gourmet foods, visiting wineries/breweries for tours, touring a food/wine/beer route, visiting farms/ orchards, visiting u-pick (pick your own) locations, and visiting food processing facilities.

Table 7  
Relationships between the Two Types of Culinary Tourists

		Deliberate Culinary Tourists	Opportunistic Culinary Tourists	Accidental Culinary Tourists	Uninterested Culinary Tourists	Total
Culinary-balanced Tourists	Observed <i>N</i>	45	133	130	9	317
	Row %	14.2%	42.0%	41.0%	2.8%	100.0%
	Column %	(37.5%)	(44.0%)	(42.6%)	(16.7%)	(40.6%)
	Observed - Expected <i>N</i>	-3.7	10.4	6.2	-12.9	
	Standardized Residual	-0.5	0.9	0.6	-2.8	
Culinary-oriented Tourists	Observed <i>N</i>	69	131	46	1	247
	Row %	27.9%	53.0%	18.6%	0.4%	100.0%
	Column %	(57.5%)	(43.4%)	(15.1%)	(1.9%)	(31.6%)
	Observed - Expected <i>N</i>	31.0	35.5	-50.5	-16.1	
	Standardized Residual	5.0	3.6	-5.1	-3.9	
Familiarity-oriented Tourists	Observed <i>N</i>	6	38	129	44	217
	Row %	2.8%	17.5%	59.4%	20.3%	100.0%
	Column %	(5.0%)	(12.6%)	(42.3%)	(81.5%)	(27.8%)
	Observed - Expected <i>N</i>	-27.3	-45.9	44.3	29.0	
	Standardized Residual	-4.7	-5.0	4.8	7.5	
Total	Observed <i>N</i>	120	302	305	54	781
	Row %	15.4%	38.7%	39.1%	6.9%	100.0%
	Column %	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

Note:  $\chi^2 = 215.90$ ; d.f. = 6;  $p < 0.0001$

Based on this definition of a culinary tourist, this study identified the four distinct segments: *deliberate*, *opportunistic*, *accidental*, and *uninterested culinary tourists*. A review of these types of culinary tourists suggests that the clusters have very different levels of participation for the selected activity items, thus supporting the labels used to describe these groups.

The second definition was based on respondents' attitudes toward, perceptions of, knowledge about, opinions of, and interests in food-related behavior at home and when traveling, including the importance of food-related experiences at destinations, preference of local and organic foods, interest in wine/beer related experiences, interests in cooking, and preference of familiar foods and restaurants at travel destinations. Based on this definition, three distinct clusters were identified: *culinary-balanced*, *culinary-oriented*, and *familiarity-oriented tourists*.

Both results clearly demonstrated that the 781 survey respondents could be neatly partitioned into four clusters based on the 26 questions relating to culinary activities and motivations, and three segments based on the five attitudinal factors toward food-related behavior at home and when traveling. This clearly indicates that the clusters “fit the data,” supporting the method used to analyze the data.

Despite the differences between the two types of culinary tourists, it was also found that there are some similarities and/or relationships between the two segmentation groups. Culinary-balanced tourists were more likely to be opportunistic and accidental culinary tourists, while culinary-oriented tourists tended to be deliberate and opportunistic culinary tourists and familiarity-oriented tourists were more likely to be accidental and uninterested culinary tourists.

As expected, these results support the previous research in terms of the strong relationships between attitudes and behaviors, and suggest that culinary experiences at destinations (level of participation in food-related activities and activities as the prime motivator) are highly related to attitudinal, psychological, perceptual, and other behavioral factors. These may include attitudes toward food-related behavior at home and when traveling, belief in significance of culinary experiences at travel destinations, interests in cooking, the desire to taste local cuisines, opinions and knowledge about local food, perceptions of culinary experiences at destinations, and so on.

Culinary tourists, especially *deliberate* and *opportunistic culinary tourists*, look similar in terms of participation in a variety of activities at destinations. These groups can therefore be considered “*serious*” culinary tourists. Both *deliberate* and *opportunistic* culinary tourists also participate highly in a variety of other activities for fun, pleasure, recreation, and entertainment.

Findings from this study suggest that product development of culinary tourism must be enjoyable, easy to consume, and presented in a manner that is connected to other cultural activities and attractions. For effective marketing practice, deliberate and opportunistic culinary tourists are equally significant in terms of the size of market, economic contribution to the destination, and cultural/social interaction with communities.

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